structure of the skull and the position of the teeth are those of a true Crocodile.

Mecistops cataphractus.

Crocodilus cataphractus, Cuvier, Oss. Foss. v. t. 5. f. 1, 2; Dum. & Bib. E. G. iii. 126 (younger) [copied A. Dum. Arch. du Mus. x. t. 14. f. 2]; Bennett, Proc. Zool. Soc. 1834, 110.
C. leptorhynchus, Bennett, Proc. Zool. Soc. 1835, 129; A. Dum. Arch. du Mus. v. 252 & i. 171. t. 14. f. 1.
M. cataphractus, Gray, Cat. B.M. 58.
M. Bennettii, Gray, Cat. B.M. 57.

Hab. West and Central Africa. Fernando Po (*Bennett*); Gaboon; Lagos; Central Africa (*Baikie*).

I think there can be no doubt that the *Crocodilus cataphractus,* figured by Cuvier from a specimen in the College of Surgeons, and the *C. leptorhynchus* of Bennett are one species, the difference in the length of the beak (in the figure) and in the form of the nuchal disk being derived from the state and age of the specimen.

XXVII.—*Notes on rare and little-known Fishes taken at Madeira.*

By James Yate Johnson, Cor. Mem. Z. S.

No. II.

Order ANACANTHINI, Müll.

Suborder Thoracici.

Fam. Gadidæ.

Phycis blennoides, Bl., Schn.

Blennius gadoides, Risso.

1st D. 9. 2nd D. 58. P. 17. V. 1. A. 53. C. III. 18. III.
M.B. 7. Scales of lat. line about 100.

Body elongate-oblong, much compressed behind, of a brownish-grey colour; the belly pale grey, marbled with dirty white.

The *head* is depressed, unarmed, and, compared with the total length, is as 1 to $4\frac{1}{3}$. Gill-openings large; the gill-covers, which are black inside, are small, and leave much of the branchiostegal membrane exposed. The scaly cheeks are slightly convex, and the skin covers and conceals the preopercle. The opercle is without a notch, and it terminates behind in a rounded projection. The snout is short, rounded, and covered with small scales; there are also scales on the mandible, but none on the thick cartilaginous lip. There is no coloured skin on the maxillary, which fits under the skin behind, and forms no part of the border of the mouth. It reaches back to the vertical from the middle of the eye. The mouth, when open, is nearly circular.

The under jaw is shorter than, and closes inside the upper. The premaxillary and mandible are set with small *teeth* in scobinate bands which have no larger teeth outside. The band in the upper jaw narrows backwards, but is much broader in front than the band of the lower jaw. There is a chevron-shaped patch of small teeth on the vomer, and also small teeth on the pharyngeals, but none on the palatines. The tongue is white, like the whole interior of the mouth; it is broad, with a slight projection in front. The chin carries a barbel of moderate length. There are no scales on the membrane between the mandible and the branchiostegal membrane. The *eye* is round and moderately large, being contained about five times in the head. It forms no part of the profile, and is distant from the tip of the snout about $1\frac{3}{5}$ of its diameter. There is a space equal to a diameter between the eyes. The *nostrils* are small, and the anterior one has a skinny appendage at its hinder border.

The vertical fins are fleshy and scaly; none of them have white edges. The *first dorsal* fin, which commences in the first third of the total length, is triangular, and has a short base. The elongate third ray is setiform above, and is nearly twice as long as the fourth, the next in length. The order of the length of the rays is 3, 4, 2=5, 6, 1, 7, 8, 9. The *second dorsal* fin is separated by a short space from the first, than which it is less high. It is long, being more than half the total length of the fish, and its middle portion is lower than the rest. It extends nearly to the caudal fin, and its posterior extremity is truncate. The pointed *pectoral* fins are inserted above the middle of the height, in the first fourth of the total length in front of the first dorsal. The fourth and fifth rays are nearly equal, and longer than the rest.

The forking *ventral* ray is very long, reaching back much beyond the commencement of the anal fin, and being equal to about one-third of the total length of the fish. About the middle there is a knot or dilatation forming a kind of elbow.

The *vent*, surrounded by a ring of black, is placed in the first half of the total length. The *anal* fin commences not far distant from it, under the eleventh or twelfth ray of the second dorsal fin. Its length is considerably more than one-third of the total length. It is not so high as the second dorsal fin, but has precisely the same shape, with its truncate termination a little nearer the *caudal* fin, which is also truncate.

The *lateral line* is a somewhat undulating groove which rises a little under the first dorsal fin; it then falls gently until there is a rapid descent over the commencement of the anal fin, which continues to the ninth or tenth ray of the anal fin; thenceforth it is straight. The scales of this line are about 100 in number.

In the height of the fish, at the anterior dorsal fin, $7+28=35$ scales were counted.

Only a single specimen of this fish has been obtained by me at Madeira, where two other species have been taken, viz. *P. mediterraneus* and *P. Yarrellii*, as well as a specimen of the subgenus *Læmonema*. M. Valenciennes has described and figured in his 'Canarian Ichthyology' (p. 78, pl. 14. fig. 2) another species of *Phycis*, under the name of *P. limbatus*. From *P. Yarrellii* and *P. limbatus* it is distinguishable by the presence of teeth on the vomer, by the elongation of the third ray of the first dorsal fin, by the ventrals being much longer than the head, and by the uniform coloration of the vertical fins, which in the two fishes referred to have white edges. From *P. mediterraneus* (which has its first dorsal fin no higher than the second) it may be discriminated by the elongation of the third ray of the first dorsal fin, by the smaller eye (contained five times in place of three times in the head), and by the ventrals being much longer than the head. From *Læmonema* (*Phycis*) *robustum*, recently described by me in a paper read before the Zoological Society, it is to be known by the chevron-shaped (not rounded) patch of vomerine teeth, by the elongation of the third in place of the first ray of the first dorsal fin, by the larger number of rays in that fin (nine in place of five), and by the vertical fins being fleshy and scaly. From *Phycis blennoides*, Risso (Hist. Nat. de l'Eur. Mér. vol. iii. p. 222), I considered it distinct on account of the elongation of the third (not the first) ray of the first dorsal, and by the larger number of rays in the second dorsal fin, Risso stating that the Mediterranean fish has but thirty-six rays in that fin. But Dr. Günther assures me that there are mistakes in Risso's description, and that the present fish is really identical, not only with the *Phycis blennoides* of Schneider (Bl. Schn. p. 56) and of Risso, but with the *Phycis furcatus* of Fleming and Yarrell.

The specimen, which was taken in the month of April, and is now in the British Museum, has the following dimensions in inches:—

Total length	$29\frac{1}{2}$
Height under 1st dorsal	$6\frac{3}{4}$
Thickness behind pectorals	$3\frac{1}{3}$
Head, length	$6\frac{7}{8}$
,, thickness below eye	$4\frac{1}{5}$
Eye, diameter	$1\frac{4}{10}$
Mouth, width from side to side when open	$3\frac{3}{8}$
,, width of band of teeth in front	$\frac{3}{10}$
Barbel	$1\frac{4}{10}$
1st dorsal, distance from snout	$8\frac{1}{8}$
,, length of base	2

1st dorsal, length of third ray	$4\frac{3}{10}$
,, ,, fourth ray	$2\frac{2}{10}$
2nd dorsal, distance from snout	$8\frac{5}{8}$
,, length of base	$15\frac{1}{2}$
,, height towards front	$1\frac{7}{10}$
Pectorals, distance from snout	$7\frac{1}{4}$
,, length	$4\frac{1}{2}$
,, width of base	$\frac{9}{10}$
Ventrals, length on right side	$10\frac{1}{2}$
,, ,, left side	$8\frac{1}{8}$
Vent, distance of its vertical from snout	13
Anal, distance from vent	$\frac{1}{2}$
,, length of base	$11\frac{3}{4}$
Tail, height behind second dorsal	$1\frac{1}{10}$
Caudal, length at middle	$3\frac{1}{3}$
,, ,, sides	$4\frac{1}{10}$

Order MALACOPTERYGII.

Suborder APODES.

Saccopharynx ampullaceus, Harwood, sp.

The curious fish which I am about to describe was taken in the month of March, off the coast of Madeira, but under what circumstances I could not learn. The man from whom I obtained it stated that he had a fish with two heads, two mouths, four eyes, and a tail growing out of the middle of the back, which had astonished the whole market; and the fishermen one and all declared they had never met with anything like it before. At first sight it really did appear to be the monster described; but a short examination brought to light the fact that one fish had been swallowed by another, and that the features of the former were seen through the thin extensible skin of the latter. On extracting the fish that had been swallowed, it proved to be a Gadoid*, and to have a diameter several times exceeding that of its enemy, whose stomach it had distended to an unnatural and painful degree.

As to the fish whose voracity had brought it to an untimely end, it was immediately pointed out to me by Dr. Günther, when I showed him a sketch of the head, that it is closely related to a fish described at some length by Dr. Harwood, in a memoir printed in the 'Philosophical Transactions,' in the year 1827, under the name of *Ophiognathus ampullaceus*. That eminent ichthyologist also informed me that a member of the same genus had been previously described by Dr. S. L. Mitchill, in the Annals of the Lyceum of New York' for 1824, under the name of *Saccopharynx flagellum*. On referring to these descriptions, I am led to think that, although the three fishes fall into the same genus, the Madeiran fish is specifically distinct from that forming the subject of Dr. Mitchill's memoir, but is perhaps specifically identical with Dr. Harwood's fish. I will first describe the specimen obtained at Madeira (which now forms part of the rich collection in the British Museum), and then make some remarks on the relationship of the three.

---

* This Gadoid is the type of a new genus, and has been described by Dr. Günther under the name of *Halargyreus Johnsonii*.

The Madeiran fish is 32 inches in length. It has a thin, soft, scaleless skin, which is jet-black. From its narrow elongated form, and from the absence of ventral fins, it would be referred, at the first glance, to the Eels; but from that tribe it is distinctly separated by the structure of its singular jaws. The upper jaw is apparently composed of the maxillary or premaxillary—bones which are invariably wanting in the tribe of true Eels. The bones of both jaws are slender and curved; those of the under jaw meet at an acute angle in front, and they are armed with a single row of small, sharp, delicate teeth, similar to those of the upper jaw, but rather more numerous. There are no teeth on the palatine bones or elsewhere in the mouth.

The gape is of enormous extent; and the animal had the power of throwing down the lower jaw until it was almost in a line with the upper, the two being subequal, and $2\frac{1}{3}$ inches in length. There is no tongue in the mouth, nor are there any branchiostegal rays. A conical snout projects nearly four-tenths of an inch beyond the upper lip; and the small oval eye, which is covered with skin, is placed on the head not far from the base of the snout. In front of each eye is a single small nostril, which does not issue in a tube.

The gill-openings are small slits, seven-tenths of an inch in length, on the underside of the body, placed only one-sixth of an inch apart, and at a distance of about $3\frac{1}{8}$ inches from the tip of the snout. What is very remarkable about these apertures is that, within the lips of each, the opposite sides are connected by three narrow cutaneous bands—two near the anterior end of the aperture, and one near the posterior end.

The minute pectoral fins are placed immediately behind the gill-openings, but a little above them. Each is about one-fifth of an inch in length, and has about thirty-two delicate rays. In reference to the pectoral fins of the fish described by Dr. Harwood, he mentions that they were principally composed of an adipose disk terminated and nearly surrounded by the rayed portion of the fin. In my fish I do not see anything of this kind; but that may be owing to the specimen being young.

A low dorsal fin, having extremely slender rays, commences in front of the vent, and at a distance of about $7\frac{1}{2}$ inches from the tip of the snout. There is no trace of ventrals. The vent is about 8½ inches distant from the snout; and behind it begins a low anal, which, though it may be traced for a considerable distance, stops, like the dorsal, short of the end of the tail.

The hinder part of the body tapers off gradually; and the finless tail is characterized by extreme tenuity, being reduced to the thinness of a thread. Two bluish-white, parallel, closely approximated lines begin at the distance of rather more than an inch from the tip of the snout, and are traceable for a considerable space along the back, one at each side of the dorsal fin. Dr. Mitchill speaks not only of a whitish line extending on each side of the dorsal fin of his fish, but of a similar stripe at each side of the anal fin.

No lateral line is visible. The vertebræ are without ribs, and all the bones are weak.

And now as to the relationship of these three fishes. Whilst it is pretty certain that all three are members of the same genus, and whilst there is scarcely ground for holding that Dr. Harwood's fish and the Madeiran fish are specifically distinct (for their differences may be due only to their different ages), yet there is one part of Dr. Mitchill's description which makes it difficult to suppose that his fish was identical in species with mine. He says that it had filiform processes or excrescences about an inch in length, and about fifty in number, depending on each side of the back, all the way from the head to the tail. In my fish there is no trace of such processes. Hence I venture to conclude that if Dr. Mitchill's fish retains the name of *Saccopharynx flagellum*, Dr. Harwood's and mine ought to be designated *Saccopharynx ampullaceus*.

I will only remark that Dr. Mitchill proposed the name *Saccopharynx* in substitution for Shaw's *Stylephorus*, supposing the two fishes thus designated to belong to the same genus. But modern ichthyologists cannot admit this to be the case; for (to say nothing of other points) the structure of the mouth is totally different, as may be at once seen by an inspection of Shaw's unique specimen, now preserved in the Museum of the College of Surgeons.

Suborder ABDOMINALES.

Fam. Scopelidæ.

Gonostoma denudata, Buon. Faun. Ital. (with a fig.).

Gasteropelecus acanthurus, Cocco.

The genus *Gonostoma* was indicated by Rafinesque, and defined by Buonaparte, as having an elongated body entirely covered with large caducous uniform scales; uniserial teeth in both jaws; pectoral fins inserted low down; the first dorsal fin rather far back, *i. e.* behind the ventral and over the anal fin. A single specimen of the genus has been taken at Madeira.

1st D. 15. 2nd D. rudimentary. A. 29. P. 11. V. 8.
C. III. 16. IV. M.B. 13.

The back and belly are black, the sides silvery grey, and there are two rows of small silvery spots extending at each side from the head to the tail, near the lower edge of the body. The skin is delicate, and the large scales easily removed. Their edges are even, and their surfaces concentrically striated.

The body is oblong and compressed; the highest part is at the nape, from which place it attenuates backwards. The sides of the body, when the skin is removed, are seen to be marked with furrows diverging from the lateral line.

The *head* is high, compressed, and unarmed; the cheeks flat; the vertex marked with low ridges. The round *eye* is contained about seven times in the head; it is distant about one diameter from the snout, and it is so high up that its border forms part of the profile. The rictus is large, extending downwards with an oblique curve much beyond the eye. The under jaw shuts inside the upper, except anteriorly, where the upper jaw reverses its curve. The mouth is black inside. Its upper border is formed entirely by the premaxillary, which is thin and dilated downwards, the slender maxillary lying behind. The *dentition* is curious. In both jaws there is a single row of delicate, acicular, nearly straight teeth, with four or five very small teeth, of similar shape, in the intervals between two larger ones. Of the larger teeth, in the specimen there are twenty-nine in the upper, and twenty-one in the lower jaw. There is a row of teeth on the palatines, a few teeth on the vomer, and a row along the middle of the fleshless tongue—all very minute. The opercular pieces are delicate, smooth, and with entire margins. There are two low crests on the opercle, starting from the same point, one vertical and the other oblique; the posterior margin of the opercle is nearly vertical.

The triangular first *dorsal* fin is placed far back over the anal fin, and both are sprinkled with minute black dots. The first two rays are very short and unbranched, the third ray is the longest; the posterior rays are very delicate. The second dorsal fin possesses rays, but is very minute.

The *pectoral* fins are oblong, and inserted very low down near the angle of the subopercle. The *ventral* fins are rather shorter than the pectoral fins, and are placed close together a little in advance of the first dorsal. The *anal* fin commences under the commencement of the first dorsal, but extends beyond it; it is high in front, but the first two rays are short, the third being the longest in the fin, from which it falls rapidly backwards. The *caudal* fin is forked. On the under edge of the tail there are five short glassy spines, which curve backwards.

The *vent* is placed at the middle of the total length.

The single specimen obtained, though measuring $5\frac{8}{10}$ inches in length, was extracted from the stomach of a malacopterygian fish, having a length of only $3\frac{7}{10}$ inches, whose black skin, frightfully distended, entirely covered it! It was doubled up, and a good deal injured. So many of the scales had been removed, that those of the lateral line could not be counted.

It is to be observed, with reference to the description of *Gonostoma denudata* given in the 'Fauna Italica,' that ten rays are assigned to the branchiostegal membrane, whereas I certainly found thirteen; that the fifth, sixth, and seventh rays of the first dorsal fin are said to be the longest, whereas in my fish the longest rays were the third, fourth, and fifth; and that, whilst the two agree in the number of the rays of the first dorsal fin, there were in my fish eleven in place of the ten rays in the pectoral fin, eight in place of six rays in the ventral fins, and twenty-nine in place of thirty rays in the anal fin.

The fish was taken in the month of March, and is now in the British Museum. The following are the dimensions of the principal parts:—

	inches.
Total length	$5\frac{8}{10}$
Height at nape	$\frac{8}{10}$
Head, length	$1\frac{1}{10}$
Eye, diameter	$\frac{3}{20}$
Mouth, width at back	$\frac{7}{20}$
,, length of upper jaw	1
Longest teeth	$\frac{1}{16}$
1st dorsal, distance from snout	$2\frac{8}{10}$
,, length of base	$\frac{11}{20}$
,, length of third ray	$\frac{9}{10}$
2nd dorsal, distance from snout	4
Pectorals, distance from snout	$1\frac{2}{10}$
,, length	$\frac{1}{2}$
Ventrals, distance from snout	$2\frac{3}{10}$
,, length	$\frac{4}{10}$
Anal, length of base	$1\frac{4}{10}$
,, length of third ray	$\frac{8}{10}$

Scopelus Bonapartii, Val. H. N. Poiss. xxii. 449.

Lampanyctus Bonapartii, Fauna Ital.

1st D. 14. 2nd D. rudimentary. P. 14. V. 7. A. 13.
C. iii. or iv. 10+9. iii. or iv. M.B. 8.

Black, the large scales reflecting purplish blue and silvery white; the fins white. There is a row of small silver spots at each side of the belly, with about four oblique rows of two or three similar spots ascending to the lateral line.

The head, compared with the length, is as 1 to 4; and the height compared with the length is as 1 to 7 nearly.

The head is somewhat compressed; it has a thin bony crest on the snout, terminating abruptly between the eyes, which are large and round. They are contained three times in the head, and are situate less than a diameter from the snout. The upper side of the orbit takes part in the outline of the head. At the antero-superior part of the orbit there is a short spine, which projects forwards. The opercular pieces are scaly, but unarmed; the opercle has an emargination above the base of the pectoral fin. The mouth is of large dimensions, and extends much beyond the eyes. Both jaws are set with minute teeth in narrow villiform bands; and there are three longitudinal rows on the tongue, separated by grooves. The upper border of the mouth is formed by the dentiferous premaxillary. The palatine bones are armed with teeth, but not the vomer. The entopterygoids carry a broad patch of minute teeth. The inside of the mouth and the gill-covers are deep black. The branchiostegal membrane has three silver blotches at each side.

The first *dorsal* fin is short, high, and placed at the middle of the back. The first two rays are short. The second dorsal fin is rudimentary. The *pectoral* fins are inserted rather below the middle of the height, and are narrow, pointed, and long, reaching back nearly to the end of the first dorsal fin, and a little beyond the vent. The abdominal *ventral* fins are inserted under the anterior part of the first dorsal, and are about as long as the pectoral fins. The *vent* is placed a little before the middle of the fish, and the *anal* fin commences just behind it. The *caudal* fin is deeply forked and tipped with black.

On the under edge of the tail there are four short stout spines, which are hooked and directed backwards; on the under edge are three similar spines*.

The *lateral line* is straight, and there are about thirty-four scales upon it.

This description has been drawn up from an individual taken in the month of November. It appears to belong to the Mediterranean species which has been described by Valenciennes under the name of *Scopelus Bonapartii*, to which, however, he assigned a fin-formula slightly differing from that of my fish, viz. 1st. D. 13. A. 13. C. 25. P. 13. V. 8. In the 'Fauna Italica' it is suggested that *S.* (*Lampanyctus*) *Bonapartii* and

---

* Valenciennes describes the tail of *S. Bonapartii* as having three spines above and four below.

S. Crocodilus, Val., may be the same species, but the fin-formula assigned to the latter (1st D. 20. A. 18) hardly admits of this supposition. It is not impossible, however, that the fish shortly described by Mr. Lowe, under the name of *Scopelus maderensis* (Trans. Zool. Soc. iii. p. 14) may have been an example of *S. Bonapartii.* The fin-rays were thus counted by him: 1st D. 13. A. 14. C. 15. P. 13. V. 8; but he is silent as to the spines on the tail, and the spine above the eye.

The example above described, now in the British Museum, yielded the following measurements:—

	inches.
Total length	3
Height over base of pectorals	$\frac{7}{16}$
Head	$\frac{6}{8}$
Mouth, rictus	$\frac{6}{10}$
,, width behind	$\frac{1}{5}$
1st dorsal, distance from snout	$1\frac{1}{10}$
,, length of base	$\frac{4}{10}$
Pectorals, distance from snout	$\frac{17}{20}$
,, length	$\frac{7}{10}$
Ventrals, distance from snout	$1\frac{1}{10}$
,, length	$\frac{7}{10}$
Vent, distance from snout	$1\frac{9}{20}$
Anal, length of base	$\frac{4}{10}$

Paralepis coregonoides, Risso, Hist. Nat. iii. 472.

1st D. 14. 2nd. D. adipose. P. 16. V. 8 or 9. A...... C. 18.
M.B. 7.

Elongate, compressed, of a brown colour; the scales minute, cycloid. The height of the body compared with the total length is as 1 to 10½. The head is large, being nearly one-fourth of the total length. The large oval eye is distant two diameters from the tip of the snout, and is contained about four times in the head, which is channeled between the eyes, and has two ridges converging forwards. It is unarmed, and the opercular pieces are toothless. The opercle and the scapulary bones are concentrically striate. The lower jaw is rather longer than the upper, and the mouth is slightly oblique. All the teeth are uniserial and minute; those at the sides of the premaxillary, which forms the upper border of the mouth, are alternately acute and rounded, with a cutting edge. In the lower jaw there is a single series of sharp, conical, curved teeth, larger at the sides than those of the upper jaw; and the palatines are armed with similar teeth. The tongue is spoon-shaped, and its margin carries a few small acute teeth.

The short and moderately high first *dorsal* fin is placed behind the middle of the body. The second dorsal fin is rudimentary, and placed over against the anal fin, the rays of which, being damaged in the specimen, cannot be given with certainty.

The obliquely truncate *pectoral* fins are inserted a little behind the edge of the opercle, and their length is less than half that of the head.

The abdominal *ventral* fins are placed underneath the first dorsal fin; they are not quite half as long as the pectoral fins.

The *anal* fin is higher in front; its base is about half as long as the head, and it is situate rather more than its own length behind the ventral fins. The *caudal* fin is emarginate.

Only a single specimen of this fish has occurred, and it has been sent to the British Museum. M. Valenciennes has registered *Paralepis sphyrenoides*, Risso (Hist. Nat. iii. 473) as having been taken at the Canaries; but the distinctness of that species from *P. coregonoides*, Risso, is doubtful. Bonaparte thought that they were forms of the same species; but, if distinct, he would define them thus:—

P. coregonoides, corpore extenso; maxilla breviore quam mandibula; pinna dorsali ventralibus oppositis; anali radiis 22.

1^{a} D. 10. 2^{a} D. 6, rud. P. 13. V. 1/8. A. 2/20. C. 17.

P. sphyrenoides, corpore subextenso; maxillis æqualibus; pinna dorsali ventralibus post-posita; anali radiis 30.

1^{a} D. 10. 2^{a} 3? rud. P. 9. V. 1/8. A. 30. C. 18.

In my specimen the anal fin is damaged, and the number of rays cannot be ascertained; in other respects it seems nearer the form named *P. coregonoides* than the other supposed species. The Mediterranean fish is said not to exceed 5 inches in length. The following measurements were taken from the fish which afforded materials for the foregoing description:—

	inches.
Total length	$7\frac{3}{8}$
Height behind pectorals	$\frac{6}{10}$
Thickness	$\frac{1}{5}$
Head	$1\frac{7}{8}$
Eye, longer axis	$\frac{9}{20}$
First dorsal, distance from snout	$4\frac{1}{5}$
,, length of base	$\frac{4}{10}$
Pectorals, length	$\frac{7}{10}$
,, distance from snout	2
Ventrals, length	$\frac{3}{10}$
Anal, length of base	$\frac{9}{10}$
,, distance from ventrals	1

Fam. **Alepocephalidæ**, Val.

Alepocephalus rostratus, Risso, Hist. Nat. iii. p. 449, f. 27; C. & V. xix. p. 465, pl. 554.

D. 16–18. P. 10–11. V. 9. A. 19–22.
C. VIII. or IX. 10+11. VIII. or IX. M.B. 6–7.

Compressed, elongate, the outlines of the back and belly nearly parallel for a considerable space and hardly beginning to approximate before the posterior portions of the dorsal and anal fins. The belly is ecarinate. The body is covered with large cycloid scales inserted in a very delicate brown skin. The scales are easily displaced, and the skin upon them has a purplish-blue or violet colour. The largest scales measure eight-tenths of an inch by five-tenths. All the fins are bluish black.

The *head* is compressed, unarmed, flat above, and covered with a soft, muciferous, scaleless skin, of a dark-indigo colour. A clear, colourless, gelatinous matter, containing dark spots, lies under this skin upon the bones. A strip of smooth scaleless skin advances upon the body from the head as far as the commencement of the lateral line. The large, nearly round eyes are lateral, but placed high up, a diameter apart. Each is contained nearly five times in the head, and is at the distance of a diameter from the snout, and two-thirds of a diameter from the nearest part of the jaw. The pupil reflects a pale-indigo colour. Below the eye the skin is marked with a few radiating ridges. In front of each eye is a pair of nostrils, the hinder one being larger. On stripping away the skin from the opercular pieces, two oblique ridges are seen on the opercle, which project at the margin as flexible spines; on the preopercle there is a vertical ridge. The snout is broad, rounded, and projecting, with a depression in the profile between its tip and the eyes. The gill-openings are large. The throat and mouth are nearly black within; tongue thick and smooth; the chin is without appendages, but has a large bony boss. The gape is wide, but the cleft does not reach beyond the vertical of the anterior margin of the eye.

The *jaws* are of equal length; the upper border of the mouth is formed partly of the premaxillary and partly of the maxillary; but the former alone carries the uniserial teeth, which are very small, conical, acute, and slightly curved. The teeth of the lower jaw are similar, but in front a few are rather larger. There is also a row of similarly shaped teeth on the palatine bones, but the vomer is unarmed. The branchiostegal rays in one specimen were six in number, in others seven. The membrane is very large.

The single short *dorsal* fin is placed far behind, over against the anal fin; its base is scaly. The first three or four rays are short; the longest rays are about equal to the diameter of the eye.

The oval *pectoral* fins have their bases covered with scales; their length is not quite twice the diameter of the eye, and they are inserted at a distance of about one-half of that diameter behind the edge of the opercle.

The *ventral* fins are shorter than the pectoral fins, and are placed about the middle of the body minus the caudal fin. The first ray is unbranched.

The *anal* fin has a base longer than the dorsal fin; five or six of its rays seem to be unbranched.

The forked *caudal* fin has a scaly base, and its lobes are of equal length.

The *lateral line* inclines gently from the vertical of the pectoral fin, and its course to the tail is uninterrupted. From fifty-two to sixty scales have been counted.

On dissection, the peritoneal lining was found to be fuscous, the coats of the cæcal stomach very thick, the pancreatic cæca from twenty-four to twenty-six in number. The intestinal tube was long and much convoluted, and the rectum had a spiral valve of seven or eight whorls. The gall-bladder was attached to the small lobe of the liver. The liver was not large, and was found lying on the left side of the stomach. There was no air-bladder. The ova formed a long yellowish mass, extending nearly the whole length of the abdominal cavity. The muscle of the body was white and firm. In several parts of the abdominal cavity, entozoa of different species were discovered, of one of which (a *Tetrarhynchus*) Dr. Baird has given a description in the Proc. Zool. Soc. for 1862, p. 115.

The systematic position of this fish amongst Malacopterygians has been much debated. By Duméril it was placed in his family of *Opisthoptères,* between *Galaxias* and *Stomias,* near *Esox* and *Belone.* Valenciennes has considered it the type of a peculiar family. Risso first described it from Mediterranean specimens. During the last two or three years several examples, varying in length from 23 to 27½ inches, have occurred at Madeira, where it is known to the fishermen under the name of "Trista-linda." They were taken in the months of January, February, and March.

The following measurements were taken from the largest example:—

	inches.
Total length	27$\frac{1}{2}$
Height behind pectorals	6
Thickness	2
Head	7
Eye	1$\frac{1}{2}$
Under jaw, length	2
Hinder nostril, length $\frac{1}{2}$ inch; width	$\frac{1}{3}$
Dorsal, length of base	3
,, ,, longest ray	1$\frac{1}{2}$
Pectorals, length	2$\frac{3}{4}$
,, distance from tip of under jaw	7$\frac{1}{2}$
Ventrals, length	2$\frac{1}{3}$
,, distance from tip of under jaw	12$\frac{1}{2}$
Anal, length of base	4$\frac{1}{3}$
,, distance from roots of ventrals	5

In a specimen 23 inches long:—

Gall-bladder, diameter	$\frac{6}{10}$
Liver, length of larger lobe	2$\frac{8}{10}$
,, width ,,	1$\frac{1}{10}$
Stomach, length	4$\frac{1}{2}$
,, width	1$\frac{1}{2}$

XXVIII.—*On Additions to the Madeiran Coleoptera.*

By T. Vernon Wollaston, M.A., F.L.S.

Fam. **Carabidæ.**

Genus Trechus.

Clairville, Ent. Helv. ii. 23 (1806).

1. *Trechus minyops*, n. sp.

T. angustulo-oblongus, rufo-ferrugineus, nitidus; capite ovali, postice subcrasso, i. e. pone oculos (minutissimos, valde demissos) vix contracto, sulcis frontalibus sat profundis, curvatis; prothorace subquadrato postice vix latiore, angulis anticis subporrectis acutiusculis, posticis rectis, canaliculato, utrinque ad basin profunde impresso; elytris sat profunde subpunctato-striatis, interstitio tertio punctis duobus impresso; antennis rufo-testaceis, brevibus, apicem versus moniliformibus; pedibus testaceis.

Long. corp. lin. 1$\frac{1}{3}$.

Habitat in montibus Maderæ, duobus speciminibus ad S. Antonio da Serra a Dom. Moniz detectis.

T. narrowish-oblong, being widest in the middle and about equally (though very slightly) narrowed before and behind, reddish-ferruginous, and shining (but not highly polished). *Head* oval, and with the eyes extremely small, and so completely sunken that they do not project at all beyond the curvature of